IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Kevin Collins, et al.	Examiner: Alicia Baturay	
Serial No.:	09/858,080	Group Art Unit: 2155	
Filed:	May 15, 2001	Docket No.: 10006721-1	
Title:	Method and Apparatus to Manage Transactions at a Network Storage Device		

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

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Commissioner for Patents
P.O. Box 1450
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Sir:

This Appeal Brief is filed in response to the Final Office Action mailed March 21, 2007 and Notice of Appeal mailed June 21, 2007.

AUTHORIZATION TO DEBIT ACCOUNT

It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's deposit account no. 08-2025.

I. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. RELATED APPEALS AND INTERFERENCES

There are no known related appeals or interferences known to appellant, the appellant's legal representative, or assignee that will directly affect or be directly affected by or have a bearing on the Appeal Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1 – 21 stand finally rejected. The rejection of claims 1 – 21 is appealed.

IV. STATUS OF AMENDMENTS

No amendments were made after receipt of the Final Office Action. All amendments have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element or that these are the sole sources in the specification supporting the claim features.

The following summary is copied from excerpts occurring in the Summary of the Invention section of the application:

The inventors have devised apparatus and methods for managing a network storage device (e.g., a network attached storage (NAS) device, a storage area network (SAN), etc.), at the network storage device itself. Preferably a usage policy (or policies) is centrally generated at a policy management server and distributed to one or more network storage devices to prioritize transactions at the network storage device. (See p. 3, lines 6-11). For example, incoming transactions may be ordered among other transactions in a queue for access to storage at the network storage device. Or for example, outgoing transactions may be assigned a priority for handling at the storage device and/or elsewhere on the network. Preferably, the usage policy includes a number of rules which define a number of priorities based on meta data associated with the transaction. (See p. 3, lines 18-24).

According to claim 1, a method for managing transactions (200-202 in FIG. 2; p. 7, line 29 – p. 8, line 12; p. 8, line 12; p. 8, line 26 – p. 26 – p. 13, line 5; p. 14, lines 14-17) at a network storage device (20 in FIG. 1-3; p. 6, line 1 – p. 7, line 28; p. 8, lines 13-25). The method comprises receiving an incoming transaction (200 in FIG. 2) at said network storage device (20 in FIG. 1-3); assigning a priority (320 in FIG. 4; Table 3 on p. 11; p. 11, line 7 to p. 12, line 26) to said incoming transaction (200 in FIG. 2) relative to other incoming transactions (200 in FIG. 2) at said network storage device (20 in FIG. 1-3) based at least in part on a usage policy (250 in FIG. 4; p. 6, line 13 to p. 7, line 3; p. 7, line 29 to p. 9, line 1; p. 10, line 25 to p. 11, line 10; p. 13, lines 1-26; p. 14, line 25 to p. 15, line 9); and overriding said priority with a requested priority included in said incoming transaction (FIG. 4: p. 9, lines 2-13).

According to claim 5, a method for managing transactions (200-202 in FIG. 2; p. 7, line 29 – p. 8, line 12; p. 8, line 12; p. 8, line 26 – p. 26 – p. 13, line 5; p. 14, lines 14-17) at plural network storage devices (20 in FIG. 1-3; p. 6, line 1 – p. 7, line 28; p. 8, lines 13-25). The method comprises generating a usage policy (250 in FIG. 4; p. 6, line 13 to p. 7, line 3; p. 7, line 29 to p. 9, line 1; p. 10, line 25 to p. 11, line 10; p. 13, lines 1-

26; p. 14, line 25 to p. 15, line 9) at a server (80 in FIG. 1) for said network storage devices (p. 8, lines 13-17; 410 in FIG. 5; p. 14, lines 25-26); distributing said usage policy (250 in FIG. 4) from said server across a network to said network storage devices (20 in FIG. 1-3) for prioritizing (320 in FIG. 4; Table 3 on p. 11; p. 11, line 7 to p. 12, line 26) a plurality of incoming transactions (200-202 in FIG. 2) received at said network storage devices (20 in FIG. 1-3) relative to one another; and providing updates to said usage policy from said server to said network storage devices (420 in FIG. 5: p. 16, lines 2-6).

According to claim 8, an apparatus for managing a plurality of incoming transactions (200-202 in FIG. 2; p. 7, line 29 – p. 8, line 12; p. 8, line 12; p. 8, line 26 – p. 26 – p. 13, line 5; p. 14, lines 14-17) at a network storage device (20 in FIG. 1-3; p. 6, line 1 – p. 7, line 28; p. 8, lines 13-25). The apparatus comprises computer readable storage medium at said network storage device (20 in FIG. 1-3); a usage policy (250 in FIG. 4; p. 6, line 13 to p. 7, line 3; p. 7, line 29 to p. 9, line 1; p. 10, line 25 to p. 11, line 10; p. 13, lines 1-26; p. 14, line 25 to p. 15, line 9) stored on said computer readable storage medium; and computer readable program code residing in said computer readable storage medium, comprising program code for prioritizing (320 in FIG. 4; Table 3 on p. 11; p. 11, line 7 to p. 12, line 26) said plurality of incoming transactions (200 in FIG. 2) relative to one another based on said usage policy (250 in FIG. 4), wherein said prioritizing in said usage policy uses at least two conditions based on (1) user logon, (2) originating application, (3) user-requested priority, and (4) purpose for accessing the network storage device (Rule 300 in Usage Policy 250 in FIG. 3: p. 10, lines 8-16).

According to claim 13, an apparatus for managing a plurality of incoming and outgoing transactions (200-202 in FIG. 2; p. 7, line 29 – p. 8, line 12; p. 8, line 12; p. 8, line 26 – p. 26 – p. 13, line 5; p. 14, lines 14-17) at a network storage device (20 in FIG. 1-3; p. 6, line 1 – p. 7, line 28; p. 8, lines 13-25). The apparatus comprises computer readable storage medium; and computer readable program code residing in said storage medium, including program code for defining a usage policy (250 in FIG. 4; p. 6, line 13 to p. 7, line 3; p. 7, line 29 to p. 9, line 1; p. 10, line 25 to p. 11, line 10; p. 13, lines 1-26;

p. 14, line 25 to p. 15, line 9) for prioritizing said plurality of incoming and outgoing transactions (200-202 in FIG. 2 and 205 in FIG. 3) relative to one another.

According to claim 20, an apparatus for managing a number of incoming and outgoing transactions (200-202 in FIG. 2; p. 7, line 29 – p. 8, line 12; p. 8, line 12; p. 8, line 26 – p. 26 – p. 13, line 5; p. 14, lines 14-17) at a network storage device (20 in FIG. 1-3; p. 6, line 1 – p. 7, line 28; p. 8, lines 13-25). The apparatus comprises means (30 in FIG. 1 and 2; p. 7, line 29 to p. 8, line 2; p. 10, lines 25-30) for reading meta data from said number of incoming and outgoing transactions (200-202 in FIG. 2 and 205 in FIG. 3) at said network storage device (20 in FIG. 1-3); and means (250 in FIG. 4; p. 6, line 13 to p. 7, line 3; p. 7, line 29 to p. 9, line 1; p. 10, line 25 to p. 11, line 10; p. 13, lines 1-26; p. 14, line 25 to p. 15, line 9) for prioritizing said number of incoming and outgoing transactions (200-202 in FIG. 2 and 205 in FIG. 3) based at least in part on said meta data, wherein said prioritizing means (250 and 320 in FIG. 4) resides at said network storage device (20 in FIG. 1-3).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-21 are rejected under 35 USC § 102(e) as being anticipated by USPN 6,157,963 (Courtright).

VII. ARGUMENT

The rejection of claims 1 – 21 is improper, and Applicants respectfully request reversal of these rejections.

The claims do not stand or fall together. Instead, Applicants present separate arguments for various claims. Each of these arguments is separately argued below and presented with separate headings and sub-heading as required by 37 C.F.R. § 41.37(c)(1)(vii).

Claim Rejections: 35 USC § 102(e)

Claims 1-21 are rejected under 35 USC § 102(e) as being anticipated by USPN 6,157,963 (Courtright). Applicants respectfully traverse this rejection.

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. See MPEP § 2131, also, *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). Since Courtright does not teach each element in the claims, these claims are allowable over Courtright.

The claims recite numerous elements that are not taught in Cartright. Examples of some of these elements are shown below.

Claim 1

As one example, claim 1 recites assigning a priority to incoming transactions at a network storage device. The claim then recites "overriding said priority with a requested priority included in said incoming transaction." Nowhere does Courtright teach or even suggest <u>overriding</u> priorities with a requested priority included in an incoming transaction.

The Examiner argues that this element is taught in Courtright at column 8, lines 24-42. Applicants respectfully disagree.

Courtright at column 8, lines 24-42 teaches that different priority schemes can assign a priority to an I/O request. "For example, I/O requests may be prioritized by storage user priority, storage object priority, job priority or a combination of all of these

factors" (see Courtright at col. 8, lines 24-27). Nowhere does Courtright teach that an assigned priority is overridden as recited in claim 1. Further, nowhere does Courtright teach that a priority is overridden with a requested priority included in an incoming transaction. Again, Courtright teaches, for example, that a user can assign a priority. Courtright never states that this user assigned priority overrides a previous priority that was assigned at the network storage device.

Anticipation under section 102 can be found only if a single reference shows exactly what is claimed (see *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985)). For at least these reasons, independent claim 1 and its dependent claims are allowable over Courtright.

As another example, claim 1 recites that the priority is assigned "at" the network storage device. By contrast, Courtright assigns the priority at the storage controller, not the storage object or network storage device. Figures 1 and 2 in Courtright show that the priority is assigned at the storage controller 16, not at the storage objects 20-1, 20-2, 20-m. As taught in Courtright, the processor 24 (see FIG. 2 in Courtright) "will prioritize and schedule requests from storage users for storage objects" (see Courtright col. 4, lines 31-34). Thus, Courtright expressly teaches that the storage controller, not the storage devices, assigns priorities to incoming transactions.

For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference (see *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990)). For at least these reasons, independent claim 1 and its dependent claims are allowable over Courtright.

Claim 5

As one example, claim 5 recites generating a usage policy at a server. The claim then recites "distributing said usage policy from said server across a network to said network storage devices." This element is not taught in Courtright.

Courtright discloses that a processor prioritizes I/O requests in accordance with a predetermined prioritizing algorithm (see Courtright at 4: 55-56). Courtright, however, never discloses that the prioritizing algorithm is generated at a server and then distributed

to network storage devices as recited in claim 5. **In Courtright, the priorities are never distributed to the storage devices.**

The Examiner argues that this element is taught in Courtright at column 8, lines 36-42. Applicants respectfully disagree.

Courtright at column 8, lines 36-42 teaches that a user can change priorities for storage. This section further states that this change is downloaded to the "storage controller" not to the storage devices. Looking to Figure 2, Courtright is teaching that a user can change the priorities and download these changes to the storage controller 16. Courtright never states or even suggests that these changes are downloaded to the storage objects 20-1, 20-2, 20-m.

Anticipation is established only when a single prior art reference discloses each and every element of a claimed invention united in the same way (see *RCA Corp. v. Applied Digital Data Systems, Inc.*, 730 F.2d 1440, 1444 (Fed. Cir. 1984)). For at least these reasons, independent claim 5 and its dependent claims are allowable over Courtright.

As another example, claim 5 recites "providing updates to said usage policy from said server to said network storage devices." Courtright is completely silent on providing updates. Further, Courtright never teaches that updates are provided "from" the server "to" the storage devices. In Courtright, the server (i.e., storage controller 16) assigns the priorities. The priorities are not assigned at the storage objects in Courtright.

The Examiner argues that this element is taught in Courtright at column 8, lines 36-42. Applicants respectfully disagree.

Courtright at column 8, lines 36-42 teaches that a user can change priorities for storage. This section further states that this change is downloaded to the "storage controller" not to the storage devices. Looking to Figure 2, Courtright is teaching that a user can change the priorities and download these changes to the storage controller 16. Courtright never states or even suggests that these changes are downloaded to the storage objects 20-1, 20-2, 20-m. Thus, Courtright never teaches that updates are provided from the server to the storage devices. **In Courtright, the updates are provided to the server, not the storage devices.**

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There can be no difference between the claimed invention and the cited reference, as viewed by a person of ordinary skill in the art (see *Scripps Clinic & Research Foundation v. Genentech Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991)). For at least these reasons, independent claim 5 and its dependent claims are allowable over Courtright.

Claim 8

As one example, claim 8 recites program code for prioritizing incoming transactions relative to one another based on said usage policy. The claim then recites that the prioritizing in the usage policy "uses at least two conditions based on (1) user logon, (2) originating application, (3) user-requested priority, and (4) purpose for accessing the network storage device." By contrast, Courtright teaches priority based on a priority value assigned to a particular client (see 4: 59-67).

The Examiner argues that this element is taught in Courtright at column 8, lines 24-30. Applicants respectfully disagree.

Courtright at column 8, lines 24-30 teaches that different priority schemes can assign a priority to an I/O request. "For example, I/O requests may be prioritized by storage user priority, storage object priority, job priority or a combination of all of these factors" (see Courtright at col. 8, lines 24-27). Nowhere does Courtright teach that the priority is based on at least <u>two conditions</u> as recited in claim 8. In other words, the Examiner has failed to cite a location in Courtright that teaches assigning priority based on <u>two</u> conditions from (1) user logon, (2) originating application, (3) user-requested priority, and (4) purpose for accessing the network storage device.

Anticipation under section 102 can be found only if a single reference shows exactly what is claimed (see *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985)). For at least these reasons, independent claim 8 and its dependent claims are allowable over Courtright.

As another example, claim 8 recites that the usage policy is stored "at" the network storage device. By contrast, Courtright stores the policy at the storage controller, not the storage object or network storage device. Figures 1 and 2 in Courtright show that the priority is stored and assigned at the storage controller 16, not at the storage objects 20-1, 20-2, 20-m. As taught in Courtright, the processor 24 (see FIG. 2 in Courtright)

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"will prioritize and schedule requests from storage users for storage objects" (see Courtright col. 4, lines 31-34). Thus, Courtright expressly teaches that the storage controller, not the storage devices, stores and assigns priorities to incoming transactions.

For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference (see *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990)). For at least these reasons, independent claim 8 and its dependent claims are allowable over Courtright.

Claim 13

As one example, claim 13 recites "program code for defining a usage policy for prioritizing said plurality of **incoming** and **outgoing transactions relative to one another**" (emphasis added). By contrast, Courtright teaches priority based on <u>incoming</u> I/O requests. Courtright never mentions how priority is determined for <u>outgoing</u> I/O requests.

The Examiner argues that this element is taught in Courtright at column 5, lines 7-30. Applicants respectfully disagree.

Courtright at column 5, lines 7-30 discusses how incoming I/O request are prioritized. Courtright does not discuss how outgoing transactions are prioritized relative to one another.

It is well settled that to anticipate a claim, the reference must teach every element of the claim, see M.P.E.P. § 2131. For at least these reasons, independent claim 13 and its dependent claims are allowable over Courtright.

As another example, claim 13 recites prioritizing the incoming and outgoing transactions "relative to one another." Courtright never discloses a relationship for prioritizing both incoming and outgoing I/O requests "relative to one another."

For at least these reasons, independent claim 13 and its dependent claims are allowable over Courtright.

As another example, claim 13 recites that the computer code for prioritizing transactions resides in the storage medium "at" the network storage device. By contrast, Courtright stores the policy at the storage controller, not the storage object or network storage device. Figures 1 and 2 in Courtright show that the priority is stored and assigned

at the storage controller 16, not at the storage objects 20-1, 20-2, 20-m. As taught in Courtright, the processor 24 (see FIG. 2 in Courtright) "will prioritize and schedule requests from storage users for storage objects" (see Courtright col. 4, lines 31-34). Thus, Courtright expressly teaches that the storage controller, not the storage devices, stores and assigns priorities to incoming transactions.

For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference (see *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990)). For at least these reasons, independent claim 13 and its dependent claims are allowable over Courtright.

Claim 20

As one example, claim 20 recites "means for reading meta data from said number of **incoming and outgoing transactions** at said network storage device" (emphasis added). By contrast, Courtright teaches priority based on incoming I/O requests. Courtright never mentions how priority is determined for outgoing I/O requests.

For at least these reasons, independent claim 20 and its dependent claims are allowable over Courtright.

As another example, claim 20 recites "means for prioritizing said number of **incoming and outgoing transactions** based at least in part on said meta data" (emphasis added). By contrast, Courtright teaches priority based on incoming I/O requests. Courtright never mentions prioritizing outgoing I/O requests.

For at least these reasons, independent claim 20 and its dependent claims are allowable over Courtright.

As yet another example, claim 20 recites that the "prioritizing means resides at said network storage device." As noted herein, Courtright teaches that the prioritizing means resides at the controller or server, not at the storage devices.

For at least these reasons, independent claim 20 and its dependent claims are allowable over Courtright.

CONCLUSION

In view of the above, Applicants respectfully request the Board of Appeals to reverse the Examiner's rejection of all pending claims.

Any inquiry regarding this Amendment and Response should be directed to Philip S. Lyren at Telephone No. 832-236-5529. In addition, all correspondence should continue to be directed to the following address:

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VIII. Claims Appendix

1. (previously presented) A method for managing transactions at a network storage device, comprising:

      receiving an incoming transaction at said network storage device;

      assigning a priority to said incoming transaction relative to other incoming transactions at said network storage device based at least in part on a usage policy; and

      overriding said priority with a requested priority included in said incoming transaction.

2. (original) A method as in claim 1, further comprising receiving said usage policy at said network storage device, and wherein said network storage device is a NAS device.

3. (original) A method as in claim 1, further comprising:

      reading meta data from said transaction; and

      comparing said meta data to a number of rules defined in said usage policy, wherein assigning said priority to said transaction is based on at least part of said meta data satisfying at least one condition of said number of rules.

4. (original) A method as in claim 1, further comprising ordering said transaction among other transactions in a queue at said network storage device.

5. (previously presented) A method for managing transactions at plural network storage devices, comprising:

      generating a usage policy at a server for said network storage devices;

      distributing said usage policy from said server across a network to said network storage devices for prioritizing a plurality of incoming transactions received at said network storage devices relative to one another; and

      providing updates to said usage policy from said server to said network storage devices.

6. (previously presented) A method as in claim 5, further comprising identifying said network storage devices on the network, and wherein said network storage devices are NAS devices.

7. (previously presented) A method as in claim 5, wherein said usage policy comprises a number of rules, each including meta data and a corresponding priority.

8. (previously presented) An apparatus for managing a plurality of incoming transactions at a network storage device, comprising:

      computer readable storage medium at said network storage device;

      a usage policy stored on said computer readable storage medium; and

      computer readable program code residing in said computer readable storage medium, comprising program code for prioritizing said plurality of incoming transactions relative to one another based on said usage policy, wherein said prioritizing in said usage policy uses at least two conditions based on (1) user logon, (2) originating application, (3) user-requested priority, and (4) purpose for accessing the network storage device.

9. (original) An apparatus as in claim 8, wherein said computer readable program code is a software agent, and wherein said network storage device is a NAS device.

10. (original) An apparatus as in claim 8, wherein said usage policy comprises a number of rules which define a number of priorities for a number of meta data, wherein said program code assigns one of said priorities to one of said transactions when said transaction satisfies at least one of said rules.

11. (previously presented) An apparatus as in claim 8, wherein said number of transactions are packetized signals comprising at least one data field and at least one meta data field, wherein said program code reads said at least one meta data field and orders said transactions among other transactions in a queue based on said at least one meta data field satisfying a condition of a rule in said usage policy.

12. (original) An apparatus as in claim 8, wherein said usage policy comprises a number of default rules.

13. (previously presented) An apparatus for managing a plurality of incoming and outgoing transactions at a network storage device, comprising:

computer readable storage medium; and

computer readable program code residing in said storage medium, including program code for defining a usage policy for prioritizing said plurality of incoming and outgoing transactions relative to one another.

14. (original) An apparatus as in claim 13, wherein said computer readable program code resides at a policy management server and further comprises program code for distributing said usage policy to said network storage device.

15. (original) An apparatus as in claim 13, wherein said computer readable program code further comprises program code for identifying said network storage device, and wherein said network storage device is a NAS device.

16. (previously presented) An apparatus as in claim 13, wherein said computer readable program code further comprises program code for prioritizing said number of transactions based on said usage policy.

17. (previously presented) An apparatus as in claim 16, wherein said computer readable program code further comprises:

program code for installing on a policy management server, said program code for defining a usage policy; and

program code for installing on said network storage device, said program code for prioritizing said transactions.

18. (previously presented) An apparatus as in claim 13, wherein said transactions are incoming transactions to said network storage device.

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19. (previously presented) An apparatus as in claim 13, wherein said transactions are outgoing transactions from said network storage device.

20. (previously presented) An apparatus for managing a number of incoming and outgoing transactions at a network storage device, comprising:

means for reading meta data from said number of incoming and outgoing transactions at said network storage device; and

means for prioritizing said number of incoming and outgoing transactions based at least in part on said meta data, wherein said prioritizing means resides at said network storage device.

21. (original) An apparatus as in claim 20, further comprising means for transmitting said number of transactions based at least in part on a priority thereof.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.